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10/525,525	02/24/2005	Naoki Yoshida	YOSH3009/REF	7080

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EXAMINER	
POPOVICI, DOV	
ART UNIT	PAPER NUMBER
2625	
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07/01/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/525,525	YOSHIDA, NAOKI	
	Examiner	Art Unit	
	Dov Popovici	2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 February 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *15-36* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *15-22 and 26-34* is/are rejected.

7)☒ Claim(s) *23-25,35 and 36* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *02/24/2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

The information disclosure statement filed 02/24/2005 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 15, 17, 19, 26, 28, 30, 32 and 34 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 15, lines 22-23, the claimed recitation of "wherein a slip generated between the recording medium and the frictional carrier drum is kept within the allowable range" is unclear, vague and indefinite in the context of the claim.

The term "allowable range" in claim 15 is a relative term which renders the claim indefinite. The term "allowable range" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Therefore, the

claimed recitation of "wherein a slip generated between the recording medium and the frictional carrier drum is kept within the allowable range" renders the claim indefinite.

Claim 15 recites the limitation "the allowable range" in line 23. There is insufficient antecedent basis for this limitation in the claim.

Claims 17, 19, 26, 28, 30, 32 and 34 are rejected because they are dependent on rejected independent claim 15.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 16, 18, 20, 21, 22, 27, 29, 31 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kamikubota et al. (US 5,529,413) in view of Takeda et al. (US 5,062,723) .

As to claim 16, Kamikubota et al. (US 5,529,413) discloses a thermal transfer type image recording apparatus (see figures 2, 3A-3C, 4A-4B, 5A-5B and 6) for forming an image on a sheet-shaped recording medium (10) using a thermal head (32), the image recording apparatus comprising: a frictional carrier drum (reads on: a platen drum 20) that has a friction member having an outer circumference in a feed direction and is rotated corresponding to a thermal transfer process; a recording medium guiding mechanism (17, 18, 19 and see figures 2, 3A-3C, 4A-4B, 5A-5B) for guiding the

recording medium to be fed toward the frictional carrier drum (20); one or more auxiliary carrier members (19, 18, 27) for feeding the recording medium with rotation of the frictional carrier drum in such a way at least a part of the recording medium comes into close contact with the carrier drum, bringing at least a part of the recording medium into contact with the frictional carrier drum (20) and for rotating the recording medium together with the frictional carrier drum (20); a detector (30) for detecting whether the recording medium passes through a predetermined position; and output control means (25, 23, 22 and 32) for allowing the thermal head (32) to generate heat in accordance with an output from the detector (30).

Kamikubota et al. does not specifically mentions a frictional carrier drum that has a friction member having an outer circumference larger than the length of the recording medium in a feed direction and is rotated corresponding to a thermal transfer process.

Takeda et al. (US 5,062,723) discloses a thermal printing apparatus wherein a printing medium fastening gripper, provided on the outer periphery of a platen drum having a circumference greater than the length of the printing medium used, fastens the tip of the printing medium to the drum (see col. 1, lines 13-26).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified Kamikubota et al. wherein the frictional carrier drum that has a friction member having an outer circumference larger than the length of the recording medium in a feed direction and is rotated corresponding to a thermal transfer process.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified Kamikubota et al. by the teaching of Takeda et al. wherein the frictional carrier drum that has a friction member having an outer circumference larger than the length of the recording medium in a feed direction and is rotated corresponding to a thermal transfer process, so as to provide a mechanism design such that each time the gripper passes the thermal printing head, the printing head is retracted so as to avoid colliding with the gripper, as taught and suggested by Takeda et al. at column 1, lines 13-26.

As to claim 18, Kamikubota et al. as modified do not mention a ribbon passing through between the thermal head and the frictional carrier drum, wherein the thermal head heats the ribbon and transfers a color material from the ribbon to the recording medium.

The examiner is taking "Official Notice" that a ribbon passing through between the thermal head and the frictional carrier drum, wherein the thermal head heats the ribbon and transfers a color material from the ribbon to the recording medium is well known in the thermal printing art.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified Kamikubota et al. wherein: the thermal printer includes a ribbon passing through between the thermal head and the frictional carrier drum, wherein the thermal head heats the ribbon and transfers a color material from the ribbon to the recording medium.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified Kamikubota et al. wherein: the thermal printer includes a ribbon passing through between the thermal head and the frictional carrier drum, wherein the thermal head heats the ribbon and transfers a color material from the ribbon to the recording medium, so that a color image can be formed on the recording medium, since a ribbon is a more economic and cheaper choice to transfer color material into a recording medium and it can be easily replaceable or changed.

As to claim 20, Kamikubota et al. as modified discloses wherein the auxiliary carrier members are formed at four or more positions on the frictional carrier drum (see figures 2, 3A-3C, 4A-4B, and 5A-5B).

As to claim 21, Kamikubota et al. as modified discloses wherein the detector (30) is provided close to the thermal head (32); (see figures 2, 3A-3C, 4A-4B, and 5A-5B).

As to claim 22, Kamikubota et al. as modified discloses wherein, after the output from the detector (30), the output control means (25, 23, 22 AND 32) allows the thermal head (32) to generate heat after time corresponding to a distance from the detector (30) to the thermal head (32) passes (see column 4, lines 28-34 and col. 5, lines 19-32).

As to claim 27, Kamikubota et al. as modified discloses wherein the recording medium includes a thermal transfer dedicated paper, a thermal recording paper, and a thermal color recording paper (see col. 6, lines 20-25).

Kamikubota et al. as modified does not mention wherein the medium is normal paper, label paper, and transparent film.

The examiner is taking "Official Notice" that medium such as normal paper, label paper, and transparent film are well known in the art.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified Kamikubota et al. wherein: the medium is normal paper, label paper, and transparent film.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified Kamikubota et al. wherein: the medium is normal paper, label paper, and transparent film, since depending on the type of application desired and the type of paper needed, a user can select a normal paper for economic reasons, a label paper in order to print labels, and a transparent film in order to print on the transparent film for transparency use or application, such as, using it in a projector application, or for OCR applications or other applications that require transparent film.

As to claim 29, Kamikubota et al. as modified discloses wherein the auxiliary carrier members (19, 18, 27) include plate-shaped member (27).

As to claim 31, Kamikubota et al. as modified discloses wherein the auxiliary carrier member (19, 18, 27) further comprise a function for guiding the movement of the recording medium (10) in the rotating direction of the frictional carrier drum (20).

As to claim 33, Kamikubota et al. as modified inherently discloses wherein the auxiliary carrier member selects any pressure to keep close contact of the recording medium against the frictional carrier drum, depending on different recording mediums (see col. 5, lines 5-32).

Allowable Subject Matter

Claims 23, 24, 25 and 35-36 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 15, 17, 19, 26, 28, 30, 32 and 34 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

The following is a statement of reasons for the indication of allowable subject matter:

The closest prior art of record, namely, Kamikubota et al. (US 5,529,413) and/or Takeda et al. (US 5,062,723) do not disclose, teach or suggest, wherein a friction coefficient between the frictional carrier drum and the recording medium and a friction coefficient between the recording medium and the auxiliary carrier members is set such that a ratio of the friction coefficient between the recording medium and the auxiliary carrier members to the friction coefficient between the friction carrier drum and the recording medium is set to be 35% or less, wherein the contact length between the recording medium and the frictional carrier drum is a quarter or more of an outer circumference of the frictional carrier drum, and wherein a slip generated between the recording medium and the frictional carrier drum is kept within the allowable range, in combination with a frictional carrier drum that has an outer circumference larger than

the length of the recording medium in a feed direction and is rotated in synchronous relation with a thermal transfer process, the entire surface of at least a portion thereof with which the recording medium comes in contact being covered with an elastic member, such as rubber; a recording medium guiding mechanism for guiding the recording medium toward the frictional carrier drum; and one or more auxiliary carrier members for feeding the recording medium with rotation of the frictional carrier drum in such a way at least a part of the recording medium comes into close contact with the carrier drum, as claimed in independent claim 15.

Claims 17, 19, 26, 28, 30, 32 and 34 are dependent on independent claim 15.

The closest prior art of record, namely, Kamikubota et al. (US 5,529,413) and/or Takeda et al. (US 5,062,723) do not disclose, teach or suggest, wherein the output control means predicts a slip of the recording medium with reference to at least one of the kind and size of the recording medium, and an increase and decrease in tension of the ribbon, and finely adjusts the heating timing of the thermal head based on the slip, as recited in claim 23.

Claims 24, 25 and 36 are dependent on objected to claim 23.

The closest prior art of record, namely, Kamikubota et al. (US 5,529,413) and/or Takeda et al. (US 5,062,723) do not disclose, teach or suggest, wherein a link mechanism is further provided for determining any pressure common to the plurality of auxiliary carrier members to keep the recording medium in close contact with the frictional carrier drum, the link mechanism comprising: a ring-shaped member whose the inner circumference is provided with a plurality of cam surfaces and which can

rotate in a circumferential direction; a plurality of elastic members for generating biasing force for pressing the plurality of auxiliary carrier members toward the frictional carrier drum, respectively; and a plurality of cam followers which is moved in a diametrical direction of the ring-shaped member along the plurality of cam surfaces, respectively, and which sets the biasing force to a plurality of steps by expanding and compressing the respective elastic members, or the link mechanism comprises: elastic members for generating biasing force for pressing the plurality of auxiliary carrier members arranged around the frictional carrier drum against the frictional carrier drum, respectively; a plurality of levers which is rotatably arranged in the vicinity of the plurality of auxiliary carrier members and which expands and compresses the elastic members; and one or more connecting members for mutually connecting the levers, as claimed in claim 35.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dov Popovici whose telephone number is 571-272-4083. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Coles can be reached on 571-272-7402. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Dov Popovici/
Primary Examiner, Art Unit 2625